THE SMALL SCALE PETROLEUM ECONOMY: GOVERNMENT POLICIES AND BARGAINING STRATEGIES

by Clarence S. Bayne

Paper prepared for presentation at the
National Atlantic Economic Conference

Montego Bay, February 11-16, 1982

The following analysis was prompted by the Trinidad oil economy which produces a mere 200,000 - 250,000 barrels of crude per day, mostly for export to the U.S. East Coast. In the paper I attempt to present the theoretical possibilities for bargaining open to a small scale host country endowed with relatively small reserves of a single mineral resource (in this case, hydrocarbons) and located close to a large consumer of energy (i.e., U.S.A.). It is assumed that these hydrocarbon resources are initially controlled and commercialized by foreign suppliers of capital and technology; and that the discovery of hydrocarbon reserves continues to require imports of foreign technology and capital for their development. I start with the premise that the broad objective of government policy is to maximize the country's share of the net benefits derived from these resources over time subject to the amount of power that it can exercise against the foreign oil companies. That of the transnationals is to maximize private profits over time, seizing any advantage they obtain in the process.

The amount of power that the host government accumulates over time relative to the multinationals will determine whether its strategy will be simply that of a revenue collector; an active partner in some form of joint-venture with the companies; or the sole exploiter of its natural resource. These options imply different levels of power and the will to exercise it effectively. It can be

shows that the major producers largely because of the size of their resource base[1] and their population[2] have been able to amass and use this power. Size is, therefore, a critical variable in the balance of power bargaining model. In more general terms the scale of the economy and its level of skills determine the degree of its independence or its capacity to exercise power in either a threat situation or a negotiable context: the scale of the economy defines the size of those factors which determine the benefits that the country can offer foreign investors, i.e., the variety and depth of natural resources and the availability of (relatively cheap) skilled labour. The smaller the variety and depth of natural resources and the greater the scarcity of skilled labour and management skills (i.e., the smaller the size of the country) the more dependent the country is on foreign "know-how" and capital and hence the less potential it can be expected to have for aggressive action aimed at maximizing the net direct and indirect benefits from its natural resource(s). It is important, therefore, to examine the mechanism of the small scale economy with one mineral resource in order to get a better understanding of the limitations of size on such a country's economic development and independence.

---

[1] Represent potential market control and relative strength in a cartel.

[2] Represent available manpower and potential for defensive or aggressive action.

The economics of development in an open small scale petroleum economy. William Demas writing in his book on the economics of development in small countries[1] draws special attention to the case of the "enclave" type of underdeveloped economy. He says that this type of economy may experience increases in certain important economic indices such that GDP, domestic capital formation, imports and exports, and its level of per capita national income may even attain respectably high levels; yet this expansion may be due entirely to a boom in exports of the primary resource produced in the enclave sector of the economy; and the boom may be either short-lived or secular, depending on the physical availability of the particular commodity within the country at a reasonable real cost and on the price it commands in world markets. Demas concludes that where such secular economic expansion results in rising per capita income but the country remains an enclave economy, it would be a profound mistake to say the growth in the enclave sector necessarily constitutes economic development or self-sustained growth. Demas, drawing on the experience of the Third World countries, makes the important observation that self-sustained growth apart from requiring the internal generation of sufficient domestic savings in both the public and private sectors to maintain the growth rate, also requires a transformation of the structure of production such that the following seven elements of change are effected:[2]

---

[1]Demas, William, The Economics of Development in Small Countries with Special Reference to the Caribbean (Montreal: McGill University Press, 1969), pp. 16-19.

[2]Ibid., pp. 19-20.

1. The degree of dualism between the productivity of different sectors and regions is reduced.
2. Surplus labour is eliminated and drawn into high-productivity employment.
3. Subsistence production is eliminated and a national market is established for goods and services.
4. The share of manufacturing and services in Gross Domestic Product is increased in response to the changing composition of demand.
5. The volume of inter-industry transactions increases, mainly as a result of the growth of the manufacturing sector.
6. The ratio of imports in GDP falls in the long run - although the volume of imports increases absolutely - and the composition of imports shifts away from consumer to intermediate and capital goods.
7. The economy becomes not only more diversified but more flexible and adaptable, as a result of underlying political, social and institutional changes.

The last condition is very important for the small under-developed country whose economy is dominated by one mineral resource that is controlled by foreign multinational corporations. The risk of loss of social and political and economic independence associated with development by foreign capital has been described in Steven Hymer's[1] three-level model of the world economy. The social and economic inequalities associated with that system lead one to

---

[1]See Economics and World Order edited by J. N. Bhagwati (New York: World Law Fund, 1970), pp. 122-130.

conclude that while economic diversification is essential to the process of economic transformation it must be accompanied by a transfer of control to local hands if full development (i.e., economic, political, and social) is to be achieved. In a small scale petroleum economy now emerging from colonialism this requires a transformation of the political and social institutions, i.e. structural changes in the traditional power relationships of the country. In the small petroleum open economy it is the government that must effect these changes if it wants to reduce the inequalities inherent in such a system of international production, for the multinationals controlling the high wage petroleum sector are concerned with maximizing private profits not the social benefits to the host country. They are not concerned with the structural transformation described by Demas, for the oil sector is an enclave of the world oil economy with its decision making nodes located outside the country (at least in the initial stages of development) at level I of Hymer's model of international industrial organization. Because of the extremely hierarchical structural arrangements of this international system of economic production, manufacturing profits accrue mainly at level I because the external economies and complementaries which produce these profits are located there. Moreover, the multinational uses intra-firm transactions and transfer pricing to ensure that profits occur where they want them. The affiliates of the multinationals operating at the resource base (Hymer's level III) neither have the power nor the incentive to transfer profits earned in the mineral resource sector to the underdeveloped sectors of the host economy.

For it is in the best interest of the parent companies to either re-invest profits in the sector or transfer them elsewhere in the global system. In such a system of industrial organization very little change in the structure of production of the resource base country can be expected without host government intervention in the market system, possibly through direct government participation in and ownership of industries. One is, of course, mindful of the warning of Bauer and Yamey on the question of government promotion of industrial enterprise, that "a general lack of enterprise in a country does not in itself set up a presumption of such initiative in the public sector."[1] But this simply puts constraints on what government can be expected to do effectively at any given stage in the development process, not what it ultimately will be able to undertake as the process unfolds.

There are other serious problems associated with the small petroleum economy. Because of its small size it has critical gaps in its natural resource base. It lacks that great variety of resources that is essential for the kind of intersectoral dependence that precedes sustained economic growth. This skewness in the resource base means that it becomes impossible to build up the large intermediate and capital goods producing industries which are thought to be pivotal to economic transformation. The greater the gaps in natural resources, therefore, the greater the need to import capital and intermediate goods as inputs to the development process

---

[1]P. T. Bauer and B. S. Yamey, The Economics of Under-Developed Countries (Cambridge: The University Press, 1957), p. 161.

and hence the greater the degree of its vulnerability to external changes. This situation may be further aggravated by the continued existence of rigid colonial economic structures which favour the importation of most consumer goods. Also the size of the domestic market is too small to create incentives to growth (economies of scale) based entirely on import substitution. Its industrial development, therefore, depends on being able to find external markets for output from its new manufacturing enterprises.

In the petroleum economy growth in national output in the primary resource sector does not automatically have the disequilibrium growth effect that Hirschman talks about in The Strategy of Economic Development.[1] Import leakages, large capital outflows, poor linkages between the petroleum growth sector and the rest of the economy, and the general paucity of resources, lead to a rapid convergence of the growth process. In particular the paucity of resources and the small market size act as severe constraints on the effective transformation of the small petroleum producing economy. Indeed it is believed that many small economies could never achieve fully self-sustained growth unless they form a kind of customs union with countries which have complementary resources.[2] In any case the small petroleum economy, because of its great dependence on a wasting resource must give urgency to the question of transformation. The long-term future of

---

[1]Albert O. Hirschman, The Strategy of Economic Development (New Haven: Yale University Press, A Yale Paperbound, 1961), pp. 62-75.

[2]Demas, pp. 56-62. See also, Allister McIntyre, Decolonization and Trade in the West Indies: The Caribbean Transition (Rio Piedras: Institute of Caribbean Studies, University of Puerto Rico, 1970).

the country cannot be left to depend indefinitely on the fortunes of such a resource and the political and economic risks associated with decisions made outside the country pertaining to its exploitation.

To avoid the problems of stagnation that may result when the resource vanishes completely and foreign investors withdraw from the sector, the government must pursue a policy of economic change which makes the economy ultimately less dependent on growth in the petroleum sector.

In the initial stages of structural transformation capital is very scarce (expensive) since the domestic economy does not generate sufficient savings to meet the needs for infrastructural investment capital and private investment capital. Moreover, foreign capital tends to move between economies with similar standards of living as opposed to moving from the highly developed economies to the underdeveloped economies with small markets.[1] A major strength of the petroleum economy, however, is that the cost-price gap for crude oil is likely to be very large. This represents a major source of savings which the government can divert away from consumption into economic development programmes. It is only government that can be expected in its public role to use this surplus for transforming the economy; for it is not in the interest of the multinationals to maximize anything other than private profits. It is expected, therefore, that, especially in the small open petroleum economy, the host

---

[1] Harry G. Johnson, "Comparative Cost and Commercial Policy Theory for a Developing World Economy," Wicksell Lectures 1968 (Stockholm: Almqvist & Wiksell (sic) 1968), pp. 32-33.

government will maximize its share of the surplus earned in the hydrocarbon sector and use these resources to transform the economy; and this will mean in many instances direct participation in the investment process apart from the usual infrastructural investment in roads, hospitals, sewage, utilities, education, research, and other state functions essential to industrial and social development.

In the small developing petroleum economy (as well as the large petroleum economy) there is a constant pressure to gain complete control over capital locked up in its petroleum resources. This pressure becomes more intense as knowledge about the oil bearing structures accumulates and the host country learns more about the industry and builds up a greater bargaining capacity. Moreover, national aspirations for independence demand that the growth and power of foreign multinationals be limited. In the large petroleum economies (Venezuela, Iran, Libya, Saudi Arabia) nationalization seems to have emerged as a strategy for achieving these objectives. It is not clear, however, that nationalization will, in the case of the small petroleum host country, optimize the long run benefits to the nation. For while theoretically nationalization of the petroleum resources would mean getting the maximum possible public revenue,[1] in practice inefficiency due to lack of skills, lack of access to markets, retaliation from the multinationals and their governments

---

[1]There is a theoretical maximum represented by the difference between the present value of investment per barrel (expected incremental barrel cost) and present value of expected prices for barrels delivered throughout the life of the resource.

may mean a much smaller cash flow than if the multinationals were allowed to develop the resource under certain "condition pressures",[1] or a mixture of government ownership, joint-venture ownership,and foreign ownership.

The small petroleum economy is very vulnerable in its early transition from dependency for it lacks the political and economic power to effect a total transfer of power from foreign interests to domestic interests. The domestic market is so small that it must export either crude oil and/or products in order to make the investment worthwhile. Moreover, since it is the major source of revenue it must accelerate exports in order to meet its pressing needs for capital to finance economic development projects. Access to external markets is, therefore, essential to its development of a viable oil industry and the successful economic transformation of the economy. For a petroleum economy that is in transition from colonialism to "independence" one would therefore expect that a policy of nationalization may be politically inadvisable and even economically unfeasible.

More specifically, during the early stages of such a transition the host country is weak and the oil companies very strong. The multinationals are, therefore, unlikely to yield control over resources that are important to their global strategies. They may, on the other hand, be only too ready to give up marginal concessions which they maintain as a continuing social and political obligation

---

[1] Bayne, Clarence S., A Study of the Oil Industry of Trinidad and Tobago (Unpublished Dissertation, 1976), pp. 266-269.

or as a minor defensive marketing operation. The discovery of new resources, however, opens up opportunity for government to create new relationships and derive fresh approaches. It gives the government an opportunity to utilize the experience of the past in making decisions about the future control and development of the national resources, and use its increased bargaining power to maximize the benefits to the nation. The relative strength of the host country may also benefit from the fact that in recent times technological advances in pre-exploration survey techniques and in drilling techniques have reduced the risks of finding considerably. Moreover, the scarcity of technical know-how and the former resistance to making capital available to underdeveloped countries for investment in such surveys have been considerably reduced as a result of the provisions of assistance through the United Nations technical programmes and the more liberal lending policies of the World Bank. The initial monopoly bargaining power that the oil companies held, therefore, as a result of uncertainties associated with finding oil has been reduced or partly transferred to the underdeveloped host country.

Notwithstanding this, the small developing nation state is short on skills and domestic capital. These two factors, quite apart from the barriers created by the structure of the world oil market, may prove for the small country to be the greatest deterrent to the development of a viable government owned oil industry after the initial exploration surveys prove positive. The shortage of skills can only be partially overcome by the use of technical services

offered by the various United Nations programmes and through consultation with the OPEC countries. This is very minimal. The shortage of domestic capital accumulation is a function of underdevelopment and cannot be easily overcome except by acquiring low interest loans. These are not easily obtained for high risk oil ventures unless the country has achieved a certain level of expertise in that area. Funds are more likely to be made available if the project has a high feasibility rating.

The advisability of the government of a small country going into the oil industry alone at the exploration stage will depend on the stock of skills built up in the past, on the probability of finding in that country, the cost of extraction, the level of recoverable reserves, and the kind of linkages with consumer markets that are possible. It seems that the higher the probability of finding, the greater the level of recoverable reserves and the lower the cost of extraction (i.e., the greater the accessibility), the more advisable it is that the government should set up a government owned enterprise; but the greater the risk, the poorer the economic feasibility of the reserves, the less directly it should become involved in its development. In general, the government should not become involved in marginal projects. It should share risk with private enterprise in medium risk projects and completely control low risk projects. Let us make a selective examination of some of the advantages and disadvantages associated with three types of corporate structures that may be used in the development of the oil resources of a small country, i.e., government ownership, joint-ventures, and private

ownership involving multinationals.

The national company. The structure of the national oil company will not be unlike that of the multinational oil companies. Since domestic markets are small it will have to seek entry to foreign markets, but because of the high degree of concentration in the crude and production markets and the high degree of vertical integration the company would have to establish refining and retail outlets in foreign consumer markets. This should not be difficult for the small producer (100,000-200,000 barrels per day) since its entry into a major market would hardly be noticeable. For instance, it should be possible to buy into a small petroleum refinery and marketing enterprise in the U.S.A. or some European markets. Also it could be an aggressive competitor without being a threat to the world structure of prices. This forward integration would be essential to its long term survival and secure growth. This contract market arrangement reduces the risk associated with arm-length market sales. In the case of the U.S. markets it also makes it possible to avoid the sub optimum strategy of having to use the total output of the small petroleum economy for producing bottom of the barrel products. Take the case of a hypothetical small producer-refiner in the Caribbean area. By investing in downstream operations in the U.S. it could avoid the U.S. mandatory quota system and in so going derive a higher netback on domestic crudes by catering to the higher value product markets from behind those trade barriers. This is particularly true because in the U.S. markets the quota system keeps the prices of products artifically high, and market concentration and expected

domestic supply shortages create the conditions for major increases in the prices of refined products.

One can still capitalize on the tendency for the present mandatory quota system, petroleum taxation laws, and pollution laws to force refineries to locate outside the U.S. in nearby Caribbean and Latin American areas. This policy may, however, require imports of foreign crudes since it may be more profitable to ship domestic crudes to its refineries in foreign markets. Getting supplies of crude in excess of domestic supply, however, may require that the government enter into a joint-venture domestic refining operation with multinational corporations that have adequate supplies of crude as well as access to markets for lower value products. In this case a processing fee is charged and the government shares in the profits net of taxes. It would not be feasible for government to establish a national enterprise in this case unless it could be certain of secure crude supplies. And it could not be certain of securing these supplies if it had to buy from its competitors. The best strategy would be, therefore, to establish a joint-venture operation. The question arises, however, why would an international company want to enter into a joint-venture refining operation with any particular government enterprise to provide fuel oil to the U.S. market. Why would it not locate elsewhere, where it does not have to share its profits. The small petroleum country may be in a position to offer the company other opportunities in the form of joint operations in petrochemical and natural gas production. This would give the country a competitive edge over other territories where there are no known

hydrocarbon resources. In relationship to other countries that do have hydrocarbons, other factors such as strategic location, and low social and political risks may operate to give the small host country a competitive advantage.

Joint-venture. The joint-venture operation involving the host government and foreign suppliers of capital and technology offers several advantages to the small nation state if it is structured effectively. If the foreign company is a small company that is very dependent on the new resources of the small host country the country can extract the maximum concessions economically consistent with maximizing joint profits. The government may stipulate that it will not become a partner until the discovery of oil is verified; furthermore, that its share of the partnership will be paid from current production. Government may choose to pay its debt to the company with an interest rate lower than the internal-rate-of-return used to evaluate the project. Since under state participation government shares risk with the companies then this strategy does not trigger responses which reduce the stock of economically recoverable reserves. Provided government never participates in marginal projects state participation is a very good strategy for maximizing the discounted net cash flows to the host country.[1]

The joint-venture form of state participation can be used to ensure that effective control of the natural resource remains in local

---

[1]Anton Petro Hendrick Van Meurs, Petroleum Economics and Offshore Mining Legislation (Amsterdam-London-New York: Elsevier Publishing Co., 1971), p. 125.

hands, and as a vehicle for building up domestic knowledge about the industry and hence the bargaining capacity of the government. Government must be careful, however, to see that the structure of these agreements is such that it does not find itself essentially guaranteeing capital loans to foreign companies and generally fostering the entrenchment of foreign interest in the country.

A joint-venture company must pay taxes as well as share its after tax profits between local and private foreign interests. Therefore, if the management of the company is such that the foreign interest has effective control it is in its best interest to use its power to transfer untaxed income through the use of interaffiliate charges (royalties on technology supplied, charges for research and development and other global overheads etc.) and so avoid declaration of total actual profits in the host country. This of course reduces the net benefits to the host country. Vaitos argues that "government pursuing explicit or implicit policies which encourage joint ventures might paradoxically bring about, in the absence of other complementary policies, a higher transfer abroad of income generated in their countries by joint ventures than in the case of wholly owned subsidiaries."[1] This means that government majority ownership of shares is a desirable policy if it is combined with effective control over all aspects of decision making. In the case where private domestic investors have a sizable but minority interest, the tax regulations and policies applying to foreign investment must define

---

[1]Vaitos, Constance V., Inter Country Income Distribution and Transnational Enterprises (Oxford: Clarendon Press, 1974), p. 116.

clearly the conditions under which these charges will be tax deductable.

The foreign multinational. The situation is considerably different when production, refining and marketing, and transportation are in the hands of a multinational corporation. When that corporation holds a strong competitive position in the world product markets and has large rich crude concessions in several producing regions it is in an excellent position to exploit as well as facilitate the development of the small petroleum economy. The foreign multinational company will, however, act to influence the total market situation in the best interest of its global operations. It can do this by using its power to determine transfer prices of products and materials as well as interaffiliate charges in order to transfer incomes earned in one country to any other country on a continuous basis through its global network. These transfers of income appear as cost in one country at one point in time due to fiscal considerations, but appear as reported and/or planned investments in other countries at another point in time. Thus "global after-tax profits can be minimized through profit minimization in certain countries with corresponding inter country income distribution effects."[1] In the absence of government policies these global strategies may on the average militate against the host country over a number of years. A multinational may also enter into collusion with other companies and host governments to restrict the supply of

---

[1]For a discussion on the determinants of transfer pricing see Vaitos, Chapter VI, pp. 96-118.

crude, and thus increase prices more than proportionately in the consumer markets. Such a policy would clearly benefit the small scale petroleum economy if its government is vigilant, for in these circumstances the company is more likely to tolerate "condition pressures" higher than normal for the geological territory.

The global investment strategy of the multinational company may not be in the long term interest of the country's development. For instance, the global strategy of the multinational company may be that its refineries in the small petroleum economy should produce a product mix with a higher percentage of residual fuels than its refineries in the nearby large consumer market. In this way it observes the requirements of the commercial policies of the powerful nation state in which this market is located. Its operations there benefit from the artificially high product prices created by such a policy, while at the same time its operations in the host country benefit from a higher profit margin than it could realize on the production of fuel oil in the consuming country.

The multinational company with large reserves of cheap crude in other countries will find it in its interest to substitute these cheap crudes for the more high cost domestic crudes in its refineries located in the small petroleum country. Thus local production suffers as exploration and investment expenditures are deferred. This may occur despite the fact that the cost-price gap may make it more than economically feasible to develop domestic oil resources more fully. A large international company, such as British Petroleum, which on a global scale has a very large surplus of crude oil production over

refinery capacity, can optimize its profit position by phasing out its production operations in small producing countries where cost may be four to five times production costs in its Middle East concessions. A national enterprise in the small petroleum country, however, with no such alternative crude oil reserves elsewhere could maximize the national benefit from these domestic resources by taking advantage of the cost-price gap in the world oil market, since in general it could sell all its output at going prices. In short, what is marginal to the multinational company is not marginal to the small nation state.

What can one say then about the strategies of the small petroleum economy in the world oil market? It would seem that in the small economy no less than the large continental economies the striving for absolute sovereignty as a national objective will produce situations in which the government representing interest groups in the society will attempt to maximize the net indirect and direct benefits of the petroleum resources to the country. The small petroleum economy, however, lacks the power to pursue this objective as effectively as the large producer since it cannot influence behaviour and prices in an oligopolistic world oil market dominated by a producers' cartel (OPEC) and the multinationals. Its size, however, does give it some advantages in the sense that for some reasonable cost of production it can sell its entire output at the going prices which are likely to be several times the production cost. The existence of an aggressive OPEC cartel which has set prices at about ninety times the cost of production in Africa and the Middle East benefits the small high cost producer. Some of the weaknesses (lack of political and economic

power) of the small petroleum country have the effect that they make it a low risk territory and therefore relatively attractive to the oil companies which seek to escape the uncertainties with which they are confronted by the large oil producing countries at the production level. The small petroleum economy, however, is not completely helpless in the face of the powerful multinationals; neither do the multinationals nor large international companies possess absolute power: they do have weaknesses in their global structures which can be exploited by the small petroleum country. A great deal of the strength of the multinationals derives from the lack of technical knowledge in the host countries about the oil industry and the scarcity of capital for the development of their natural resources. This power is taken over by the host country as it acquires more knowhow. The more knowledge the government accumulates the greater is its capacity to bargain with the oil companies and consequently the more likely it is to maximize the flow of funds from the export of its hydrocarbon resources. The acquisition of knowledge is not dependent on size and in recent times this has been greatly facilitated by international institutions like the United Nations, the World Bank, and OPEC. The small petroleum economy must, therefore, systematically build up knowledge which would allow it to replicate the organizational structures essential for operating the industry at all levels. This must be a part of its development strategy for the country. In the exercise of any monopoly power it acquires from the companies it must be careful to ensure that it does not make itself a supplier in the last resort. (In a sense its small scale minimizes this possibility.) It is not absolutely clear exactly what policy the small petroleum

economy should adopt with respect to ownership and control of its petroleum resources. That would depend on the point on the learning curve that the country is at with respect to the management of the industry and the level of economic transformation the country has achieved. In the early stages of development, however, it is unlikely that its dependency on foreign capital, technology, and markets will allow it to implement decisively a policy of nationalization.

Considering the relative bargaining strength of such an economy it would seem that a policy of joint-venture operations combined with an optimal tax system and complementary procedures for preventing tax avoidance through interaffiliate charges and transfer pricing would be the most feasible and consistent with the twin objectives of local control and the maximization of net benefits over time. There are certain aspects of the industry which the small host government may find it easy to nationalize without any risk of serious retaliation, i.e., domestic marketing of refined products and service base refining operations. One should proceed with care here, however, for these operations earn only moderate, if any, profits so that these risks should be shunted to private interests (foreign or domestic). There are, however, other long term benefits that the country may derive from government nationalizing these downstream operations. It may provide the opportunity for learning about the industry by being involved in its operation. Moreover, transformation of the industry over time to comply with the long-term development objectives of the country may be only possible if such operations are removed from foreign control. In such cases the benefits are not immediately

observable: they occur over time and as the new structures evolve. In general the small host country with limited hydrocarbon resources must use the tax revenues derived from these resources to bring about the maximum transformation of the economy that it is possible to achieve before the resources are exhausted.